REL Appalachia Ask A REL Response

College and Career Readiness, Postsecondary, Rural
October 2019

Question:

Are standardized test scores or high school GPA more predictive of college enrollment and retention for rural students?

Response:

Thank you for your request to our REL Reference Desk regarding evidence-based information about whether standardized test scores or high school GPA are more predictive of college enrollment and retention for students from rural settings. Ask A REL is a collaborative reference desk service provided by the 10 Regional Educational Laboratories (RELs) that, by design, functions much in the same way as a technical reference library. Ask A REL provides references, referrals, and brief responses in the form of citations in response to questions about available education research.

Following an established REL Appalachia research protocol, we searched for peer-reviewed articles and other research reports on the links between standardized test scores, high school GPA, and postsecondary outcomes. We focused on identifying resources that specifically addressed whether test scores or GPA are more predictive of college enrollment and retention for rural students. The sources included ERIC and other federally funded databases and organizations, research institutions, academic research databases, and general Internet search engines. For more details, please see the methods section at the end of this document.

The research team did not evaluate the quality of the resources provided in this response; we offer them only for your reference. Also, the search included the most commonly used research databases and search engines to produce the references presented here, but the references are not necessarily comprehensive, and other relevant references and resources may exist. References are listed in alphabetical order, not necessarily in order of relevance.

References

Burke, M. R., Davis, E., & Stephan, J. L. (2015). *College enrollment patterns for rural Indiana high school graduates (REL 2015–083)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved from https://eric.ed.gov/?id=ED557072

From the abstract: "Postsecondary education is a fundamental tool for achieving upward mobility and economic growth. Students with an associate's or bachelor's degree earn substantially more in a lifetime and experience better working conditions and job benefits than students with only a high school diploma. This study examines differences in public college enrollment rates, as well as the usefulness of previously identified early college success predictors, in predicting presumptive college eligibility for 2010 graduates of Indiana public rural and nonrural high schools. The report also presents methodologies that could be useful for examining rural-nonrural college enrollment patterns outside Indiana. The study explored five research questions on 2010 graduates of Indiana public rural and nonrural high schools who enrolled in Indiana public colleges: (1) What proportion of graduates of rural and nonrural high schools enrolled in college, enrolled in different types of colleges (two- or four-year colleges of varying selectivity), and enrolled full-time?; (2) Did graduates of rural and nonrural high schools differ in their academic preparation or eligibility for the school lunch program (a proxy for low-income status)?; (3) Where are two- and four-year colleges located, and how does distance from high schools to colleges vary for graduates of rural and nonrural high schools who enrolled in Indiana public colleges?; (4) What proportion of rural and nonrural high school graduates who enrolled in college had academic characteristics that made them 'presumptively eligible' (see box 1) for two- or four-year public colleges of varying selectivity? What proportion who enrolled in a college undermatched with their level of presumptive eligibility?; and (5) After student- and school-level characteristics were controlled among high school graduates who enrolled in a public college, did any rural-nonrural differences remain with respect to enrolling in a two-year program? Study used administrative data from the Indiana state longitudinal data system and the Indian Commission for Higher Education. A similar proportion of graduates of rural and nonrural Indiana public high schools enrolled in college. However, rural graduates were more likely than nonrural graduates to enroll in a two-year college and less likely to enroll in a very selective four-year college."

Byun, S. Y., Irvin, M. J., & Meece, J. L. (2012). Predictors of bachelor's degree completion among rural students at four-year institutions. *The Review of Higher Education, 35*(3), 1–16. Abstract retrieved from https://eric.ed.gov/?id=EJ974190; full text available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3884699/

From the abstract: "Using the National Education Longitudinal Study, this study explored various factors that predicted bachelor's degree attainment among rural youth attending a four-year institution. Results showed that Hispanic origin, family income, parental educational expectations, the rigor of the high school curriculum, timing and intensity of college enrollment, and participation in Greek social clubs were significant predictors. Gender, parental education, family structure, number of siblings, institutional features of college first attended, and participation in intramural athletics and student government were insignificant predictors. We discussed similarities and differences between rural and metro students in factors predicting bachelor's degree completion."

Note: The study finds that curriculum intensity (credit completion) is a better predictor of bachelor's degree completion than standardized test scores for rural students.

Byun, S. Y., Meece, J. L., & Irvin, M. J. (2012). Rural-nonrural disparities in postsecondary educational attainment revisited. *American Educational Research Journal, 49*(3), 412–437. Abstract retrieved from https://eric.ed.gov/?id=EJ968047; full text available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3839859/

From the abstract: "Using data from the National Educational Longitudinal Study, this study revisited rural-nonrural disparities in educational attainment by considering a comprehensive set of factors that constrain and support youth's college enrollment and degree completion. Results showed that rural students were more advantaged in community social resources compared to nonrural students, and these resources were associated with a significant increase in the likelihood of bachelor's degree attainment. Yet results confirmed that rural students lagged behind nonrural students in attaining a bachelor's degree largely due to their lower socioeconomic background. The findings present a more comprehensive picture of the complexity of geographic residence in shaping college enrollment and degree attainment."

Note: The study finds that high school GPA, standardized test scores, and curriculum intensity (credit completion) all predict college *enrollment* for rural students, but differentially predict college *degree attainment* (highest degree obtained). All three predict bachelor's degree attainment, but only GPA significantly predicts associate's degree attainment and only standardized test scores predict no college degree completion.

Camara, W. J., & Echternacht, G. (2000). *The SAT[R] I and high school grades: Utility in predicting success in college. Research notes.* New York, NY: The College Board. Retrieved from https://eric.ed.gov/?id=ED446592

From the abstract: "For more than 70 years researchers have studied the validity of the Scholastic Assessment Test I (SAT I) and its predecessor, the Scholastic Aptitude Test, through hundreds of validity studies conducted at various colleges using the SAT in their admission process. The majority of these studies use high school records and SAT scores as predictors and freshman grade point average as the criterion representing success in college. Validity studies have consistently found that high school grades and SAT scores together are substantial and significant predictors of achievement in college. In these studies, although high school grades are typically slightly better predictors of achievement, SAT scores add significantly to the prediction. These findings tend to hold for all subgroups of students and for all types of measures of academic achievement: freshman grades, course grades, cumulative grades, and measures of persistence. Because persistence in college is influenced substantially by nonacademic factors, the validity coefficients for predicting persistence are slightly lower than for predicting specific academic criteria. For predicting nonacademic criteria and nonacademic criteria after college, high school grades and SAT scores are not good predictors."

Geiser, S., & Santelices, M. V. (2007). *Validity of high-school grades in predicting student success beyond the freshman year: High-school record vs. standardized tests as indicators of four-year college outcomes.* Berkeley, CA: Center for Studies in Higher Education. Retrieved from https://eric.ed.gov/?id=ED502858

From the abstract: "High-school grades are often viewed as an unreliable criterion for college admissions, owing to differences in grading standards across high schools, while

standardized tests are seen as methodologically rigorous, providing a more uniform and valid yardstick for assessing student ability and achievement. The present study challenges that conventional view. The study finds that high-school grade point average (HSGPA) is consistently the best predictor not only of freshman grades in college, the outcome indicator most often employed in predictive-validity studies, but of four-year college outcomes as well. A previous study, UC and the SAT (Geiser with Studley, 2003), demonstrated that HSGPA in college-preparatory courses was the best predictor of freshman grades for a sample of almost 80,000 students admitted to the University of California. Because freshman grades provide only a short-term indicator of college performance, the present study tracked four-year college outcomes, including cumulative college grades and graduation, for the same sample in order to examine the relative contribution of high-school record and standardized tests in predicting longer-term college performance. Key findings are: (1) HSGPA is consistently the strongest predictor of four-year college outcomes for all academic disciplines, campuses and freshman cohorts in the UC sample; (2) surprisingly, the predictive weight associated with HSGPA increases after the freshman year, accounting for a greater proportion of variance in cumulative fourth-year than first-year college grades; and (3) as an admissions criterion, HSGPA has less adverse impact than standardized tests on disadvantaged and underrepresented minority students. The paper concludes with a discussion of the implications of these findings for admissions policy and argues for greater emphasis on the high-school record, and a corresponding de-emphasis on standardized tests, in college admissions."

Hein, V., Smerdon, B., & Sambolt, M. (2013). *Predictors of postsecondary success*. Washington, DC: College and Career Readiness and Success Center. Retrieved from https://eric.ed.gov/?id=ED555671

From the abstract: "The purpose of this brief is to provide information to state, district, and school personnel seeking support to determine whether their students are on a path to postsecondary success. The College and Career Readiness and Success Center (CCRS Center) has received technical assistance requests from a number of states regarding factors that predict postsecondary success, and this brief summarizes and expands on the information shared with these states. Specifically, we summarize early childhood through early postsecondary education research that identifies student skills, behaviors, and other characteristics that predict future academic and workplace success. We have attempted to focus on a variety of measures drawn from readily available data that schools, districts, and states are likely to have. Through this information, policymakers and practitioners can begin to inform the development and validation of factors to identify students who are not on a path to postsecondary success as early as prekindergarten and as late as their senior year of high school. These factors can inform practice and can be integrated into a longitudinal tracking mechanism to identify and monitor individual students who may need additional resources or supports at any point during their schooling. In addition, tracking and measuring factors of success across prekindergarten to early postsecondary education offer a prime opportunity to develop and evaluate systemwide improvement efforts. For example, these data may help identify particular grades, schools, or subgroups of students (e.g., English language learners) that need additional support, enabling both school and district personnel to develop and monitor the impact of policies, programs, or interventions designed to improve outcomes for targeted groups or for the system in general."

Hodara, M., & Cox, M. (2016). *Developmental education and college readiness at the University of Alaska (REL 2016–123).* Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northwest. Retrieved from https://eric.ed.gov/?id=ED565798

From the abstract: "This study explores developmental education placement rates and how well high school grade point average and exam performance predicted performance in college-level courses among first-time students who enrolled in the University of Alaska system from fall 2008 to spring 2012. Like other colleges and universities, the University of Alaska, the state's public higher education system, is reexamining its course placement policies with the goal of lowering its developmental education placement rate (University of Alaska, 2013). The study draws on student data from the University of Alaska and a qualitative review of university placement policies from each of the three universities in the University of Alaska system for each year in the study. The four key findings are: (1) developmental education placement rates were higher in math than in English for students pursuing any type of degree. Developmental math placement rates increased as the time between students' exiting high school and entering college increased; (2) among bachelor's degree students, developmental placement rates were highest for Alaska Native students from rural areas of the state (in English) and Black students from urban areas (in math) compared with students of other racial/ethnic groups and lowest for White students from rural or urban areas compared with other groups; (3) among bachelor's degree students who enrolled in developmental education, 47 percent eventually passed college English and 23 percent eventually passed college math. In contrast, more than 60 percent of students who were placed in developmental English or math but who instead enrolled directly in college English or math passed these courses; (4) among students who enrolled directly in college-level courses, high school grade point average was a stronger predictor of performance in college English and math than were SAT, ACT, or ACCUPLACER scores. This study informs high school and college stakeholders in Alaska about which student groups at the University of Alaska have the highest developmental education placement rates and suggests which students might benefit most from college readiness resources and programs at the high school or college level. The study also shows that high school grades are better predictors of college academic performance than are standardized exams. Although this analysis is limited to students who enrolled directly in college-level courses, the findings may prompt conversations and further research among college stakeholders regarding the benefit of using additional measures to more accurately predict readiness for college coursework."

Hodara, M., & Lewis, K. (2017). *How well does high school grade point average predict college performance by student urbanicity and timing of college entry? (REL 2017–250)*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northwest. Retrieved from https://eric.ed.gov/?id=ED573041

From the abstract: "This report is a companion to a study that found that high school grade point average was a stronger predictor of performance in college-level English and math than were standardized exam scores among first-time students at the University of Alaska who enrolled directly in college-level courses. This report examines how well high school

grade point average and standardized exam scores predict college grades by the urbanicity of students' hometown and timing of college entry. Among recent high school graduates from both urban and rural areas of Alaska, high school grade point average was a better predictor of college course grades than were SAT, ACT, or ACCUPLACER scores. It was a more powerful predictor of college performance among students who entered college within a year of high school graduation than among students who delayed college entry. For students who delayed college entry, high school grade point average was a better predictor than were standardized exam scores in English, but that was not always the case in math."

Additional Ask A REL Responses to Consult

Ask A REL Appalachia at SRI International. (2018). *Are high school attendance rates associated with college enrollment, persistence, and completion?* Retrieved from https://ies.ed.gov/ncee/edlabs/regions/appalachia/askarel/aar26.asp

Additional Organizations to Consult

ACT Research: https://www.act.org/content/act/en/research.html

From the website: "ACT Research leads the field with authority and high-quality scientific evidence in support of education and workforce practices, solutions, and services. Our mission-driven team comprises a variety of backgrounds and disciplines, and offers a wide spectrum of knowledge and skills, enabling us to deliver quality, high-impact products and services aligned to ACT's strategy and mission. Together, our research teams provide policymakers, educators, parents, and learners with research-based insights to inform their decision-making, and deliver educators and workforce development professionals with tools and services needed for education and career navigation."

College Board Research: https://research.collegeboard.org/

From the website: "The College Board Research and Psychometrics teams support the organizational mission of connecting students to college success and opportunity. Our research interests span academic preparation, career readiness, college access, admissions, affordability, collegiate outcomes, and education policy. We approach our work with cutting edge methodologies, exceptional data, and the perspective of a wide range of disciplines including behavioral science, education, economics, psychology, public policy, and sociology."

College & Career Readiness & Success Center: https://ccrscenter.org

From the website: "The College and Career Readiness and Success Center (CCRS Center) is dedicated to ensuring all students graduate high school ready for college and career success. The mission of the CCRS Center is to serve Regional Comprehensive Centers in building the capacity of states to effectively implement initiatives for college and career readiness and success. Through technical assistance delivery and supporting resources, the CCRS Center provides customized support that facilitates the continuous design, implementation, and improvement of college and career readiness priorities."

National Student Clearinghouse Research Center: https://nscresearchcenter.org/

From the website: "The National Student Clearinghouse® Research Center™ is the research arm of the National Student Clearinghouse. The Research Center works with higher education institutions, states, districts, high schools, and educational organizations to better inform practitioners and policymakers about student educational pathways. Through accurate longitudinal data outcomes reporting, the Research Center enables better educational policy decisions, leading to improved student outcomes."

Partnership for Assessment of Readiness for College and Careers (PARCC): https://parcc-assessment.org/

From the website: "The Partnership for the Assessment of Readiness for College and Career (PARCC) is a collaboration of states that share a commitment to developing new-era assessments that measure students' readiness for college and career. This includes readiness to master rigorous academic content at each grade level, think critically and apply knowledge to solve problems, and conduct research to develop and communicate a point of view. The PARCC states make many of their high-quality resources available to the public through this Partner Resource Center."

Methods

Keywords and Search Strings

The following keywords and search strings were used to search the reference databases and other sources:

- ("High school GPA" or "high school grade point average" OR "high school grades") AND ("standardized test" OR SAT OR ACT) AND ("college enrollment" OR "college completion" OR "college success") AND (rural OR Appalachia)

Databases and Resources

We searched ERIC, a free online library of more than 1.6 million citations of education research sponsored by the Institute of Education Sciences (IES), for relevant resources. Additionally, we searched the academic database ProQuest, Google Scholar, and the commercial search engine Google.

Reference Search and Selection Criteria

In reviewing resources, Reference Desk researchers consider—among other things—these four factors:

- Date of the publication: Searches cover information available within the last 10 years, except in the case of nationally known seminal resources.
- Reference sources: IES, nationally funded, and certain other vetted sources known for strict attention to research protocols receive highest priority. Applicable resources must be publicly available online and in English.
- Methodology: The following methodological priorities/considerations guide the review and selection of the references: (a) study types—randomized controlled trials, quasi

experiments, surveys, descriptive data analyses, literature reviews, policy briefs, etc., generally in this order; (b) target population, samples (representativeness of the target population, sample size, volunteered or randomly selected), study duration, etc.; (c) limitations, generalizability of the findings and conclusions, etc.

- Existing knowledge base: Vetted resources (e.g., peer-reviewed research journals) are the primary focus, but the research base is occasionally slim or nonexistent. In those cases, the best resources available may include, for example, reports, white papers, guides, reviews in non-peer-reviewed journals, newspaper articles, interviews with content specialists, and organization websites.

Resources included in this document were last accessed on October 31, 2019. URLs, descriptions, and content included here were current at that time.

This memorandum is one in a series of quick-turnaround responses to specific questions posed by education stakeholders in the Appalachia region (Kentucky, Tennessee, Virginia, and West Virginia), which is served by the Regional Educational Laboratory Appalachia (REL AP) at SRI International. This Ask A REL response was developed by REL AP under Contract ED-IES-17-C-0004 from the U.S. Department of Education, Institute of Education Sciences, administered by SRI International. The content does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.